

Peckford calls Pierre "inflexible, arrogant"

by Stewart Freed

In an angry speech yesterday, Brian Peckford, premier of Newfoundland, labelled the federal government's proposed constitution "un-Canadian," and said that it conflicts with any acceptable notion of Canadian federalism.

"We have a vested interest in ensuring that the constitutional framework of Canada helps preserve our political and cultural integrity, not work against it."

Peckford spent the better part of an hour lambasting Prime Minister Trudeau and his proposals before a reserved standing-room-only crowd of McGill students. He also blamed Trudeau entirely for the current divisions in Canada.

Peckford said that Trudeau's proposals were "radical in nature," and that the "reckless nature of Trudeau's constitutional gamble" is "an exercise in futility."

Peckford compared Trudeau's approach to obtaining a new Canadian constitution to Rhodesia's unilateral declaration of independence of 1965, because the former is a significant break with the existing legal system.

"There is real danger given in the Trudeau proposals that Canada will evolve to a unitary state," he said.

Peckford said that Trudeau was making anti-English statements and that he abhors the "locker-room camaraderie" prevalent among the federal Liberals.

Peckford revealed the

contents of a telegram sent to Trudeau May 12 in which he told Trudeau that the way to keep Canada together was to move towards "a significant degree of decentralization of legislative powers."

He commented that the 'No' forces had rallied around Claude Ryan, and not the federal Liberals. The current proposals, he claimed, would benefit separatists and others, who never believed that there existed a third option (renewed federalism).

"The Trudeau proposals are an outright betrayal of Mr. Ryan and the principles and values for which he stood."

Peckford endorsed the Vancouver amending formula, but is against the federal government's move towards unilateral patriation.

"The attempt to ram these proposals through the federal parliament of Canada and use the U.K. parliament to 'launder' these proposals is shortsighted in the extreme."

"We will continue to lobby the government and parliament of Britain" to prevent the passage of Trudeau's package.

"I'm not asking for a more decentralized constitution than what we have now," said Peckford.

One of the reasons for Peckford's anger over the constitutional issue is what he perceived as a growing federal insensitivity towards the needs of Newfoundland.

He mentioned that fisheries minister Romeo LeBlanc announced two months ago that

the government office in charge of regulating Newfoundland's West Coast fishing industry will have to move to Moncton, New Brunswick.

"It is he (Trudeau), and he alone, over the last 12 years, who has provided that measure of inflexibility and philosophical arrogance which has brought us to the sorry state we are in today."

Peckford wants provincial control over off-shore resources and the development of a fishing industry.

"The chances of success (in Newfoundland's economy) under the new process is much less than under the old formula," he said.



Dailyphoto / Richard Katz

Peckford: Trudeau's unilateral patriation gamble is un-Canadian.

The McGill Daily

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Canada's Only Students' Daily

Common Front to protest cutbacks

OTTAWA (CUP) — Students, faculty and administrators from across Canada have joined forces to protest the federal government's possible withdrawal of \$1.4 billion in post-secondary education funding.

The National Union of Students (NUS), the Association of Universities and Colleges Canada (AUCC) and the Canadian Association of University Teachers (CAUT) are urging the government to give careful consideration to the impact of such a cutback.

Currently about \$3 billion is allocated to post-secondary education in cash transfers through the Established Program Funding (EPF).

"We want the federal government to recognize the importance of EPF," said Bob Patry, assistant director of information at AUCC. "Universities as a whole and faculty and students would be severely affected by a withdrawal of funding."

John Doherty, NUS executive officer, said the common front of the three groups will act as a unified voice against the cutback proposal.

Although no official funding announcement has been made by the government, the three groups believe a major cutback is a virtual certainty. In his March budget presentation, finance minister Allan MacEachen said the government would be "looking for considerable saving" from EPF.

Donald Johnston, Treasury Board president, speaking at McGill recently, said the

reports of EPF cuts are media speculation and nothing has been confirmed.

CAUT is hoping the government will establish a public inquiry before deciding on any cuts.

Conservative MP Tom MacMillan and NDP finance critic Bob Rae both recently called for a task force to study

provincial funding and the effect of cuts before a decision is made.

Patry said AUCC has been encouraging university presidents to present their concerns to cabinet ministers. Many post-secondary administrators have already expressed fears about the effects of funding withdrawal.

Open letter on disciplinary code

To the Daily:

The McGill Senate is currently considering the adoption of the new "Code of Student Conduct and Disciplinary Procedures." The code, which every student at McGill will be subject to, is a dangerous act which threatens the rights of all students.

Numerous clauses in the code are objectionable, primarily those which define non-academic offences (Section A, Part II). The definitions of these offences are unnecessarily vague and obviously open to abuse by the university. Some examples:

7. "No student, knowing that a person is a member of the staff of the University, shall fail to comply with the order of such person..."

14(b). "No student shall, on University property, individually or with a group and in connection with a demonstration, use words in a situation of clear and imminent danger which incite others to behaviour which violates any article of this section."

Being convicted of any of these violations by the Com-

mittee on Student Discipline, which does not operate according to the protections granted by the rules of evidence in civil and criminal court proceedings (Section C, Part III), can lead to punishment up to and including expulsion.

The code also places students in prospective double jeopardy, because it considers all federal and provincial offences to be part of the disciplinary code, and allows the administration to pursue simultaneously both disciplinary action and external legal action.

In short, the document will make us subject to regulations far more restrictive and arbitrary than those which deal with private citizens.

Today at 2:30 in room 820 of the Leacock Building there will be an important meeting of the McGill Senate that could, without your help, pass this arbitrary and discriminatory code.

Let's voice our demands. Be there at 2:30 in Leacock 820.

Students' Society Ad Hoc Committee on Disciplinary Code

RAEU code goes ahead

by Anita Schapiro

The Regroupement des Associations Etudiantes Universitaires (RAEU) is going ahead with its controversial student rights charter, despite the fractiousness that marred a colloque held to discuss it last weekend at the University of Montreal.

RAEU is currently submitting a revised draft of the charter to its member associations for further discussion.

The document was drawn up in response to the "paternalism of our institutions," said Benoit Laurin, secretary-general of RAEU, in a closing address to the colloque on the charter Sunday.

The proposal didn't meet with universal approval at the conference. More than a quarter of the 400-odd delegates split away from it over procedure and conducted a parallel meeting.

RAEU ultimately hopes to submit the charter to the Quebec National Assembly. If enshrined into law, the charter would provide students with legal recourse when their rights are violated.

As presently worded, the charter stipulates:

• That students should have a voice in determining

academic standards, course structure and content, and over faculty evaluation. Student parity on academic committees is suggested to implement this right.

• That admissions standards be non-discriminatory. Also that standards be made public in all cases, and that any student refused admission should have the right to know why.

In addition, the charter calls for the recognition of students' right to organize and associate. It would require administrations to recognize student associations and to collect returnable levies to fund them.

Some delegates to the colloque opposed enshrining these rights into law because doing so would result in too rigid a framework.

"We want to protect ourselves, not tie our hands," said Daniel Gaucher, Students' Society VP External, to the Sunday afternoon plenary.

"These measures are not an end in themselves," said Laurin.

**Daily Staff meeting
today 4pm**

Inside: The Daily Science edition looks at energy...

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372 — LOST AND FOUND

Found: Cross pen in front of Bronfman Building Wed. Feb. 4 around noon. Please call 392-8902, or come to Rm B-17 in the Union Building (basement).

Found: a gold ring in the McGill student ghetto on February 2nd. Contact Charles or Douglas at 322-9091.

FOUND: lovely woolen scarf in front of Administration Bldg. Pick up at Students' Society Info desk.

374 — PERSONAL

The big Day is Friday, February 13th! Happy Birthday, Sayeed Siddique.

Sue & Karen Did you like Ladies Night? The D.U.'s are having Ladies Night II Friday, free drinks again. See you there!

Canadian

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	2) Involvement in Jewish life and Israel
12:30 - 1:00 pm	Lunch break
1:00 - 2:00 pm	Workshops
	1) Opportunities in Israel
	2) Youth programmes, youth movements and educational opportunities
	3) Garinim, group Aliyah
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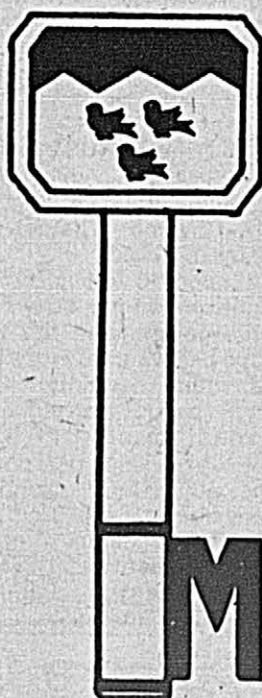


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Tonight
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THE SCARLET KEY AWARD

distinguishes those students who have made an outstanding contribution to McGill aside from their academic achievement. Excellence in leadership and involvement in campus activities will be especially considered. Any student possessing such qualifications may be nominated to receive this honour.

Students and staff alike are eligible to nominate candidates for the award. The objective is to recognize all those who merit it.

Nomination papers should include the name, address and phone number of the nominee as well as pertinent background information about the individual's activities at McGill. Nomination forms are available at "Sadie's", in the Student Union.

MARY SALEMI DEBBI SHAPIRO
 CO-CHAIRMAN, CO-ORDINATING COMMITTEE

The DEADLINE for submission of nominations is Friday, February 20, 1981

McGILL SCARLET KEY AWARD

DAILY SCIENCE ISSUE

by Marc Le Gras

After you've unloaded a pocketful of cash at the gas station, have you ever dreamt of shovelling some coal into the tank and riding off into the sunset? Though this dream of converting coal to gas and oil may seem a bit unrealistic, you may be surprised to learn that as far back as the 1820s coal gasification was actually being used in the U.S. for cooking and lighting.

In fact, in 1910 Friedrich Bergius was awarded a Nobel Prize for finding that coal could easily be converted to liquid fuel. Shortly thereafter, in 1931, Fischer-Tropsch synthesis was developed, becoming, along with the Bergius process, one of the basic coal conversion methods now used.

The importance of the energy self-sufficiency that coal conversion provides was demonstrated time and time again. For example, during the Second World War as much as 75 percent of German's oil and gas requirements were met by the Bergius conversion technique. The first of three Sasol synthetic fuel plants in South Africa has been in operation 25 years on "national security grounds", even though the economics of doing so had, up till a few years ago, been questionable.

Finally, in non-OPEC countries, coal conversion offers interesting economic and political alternatives to importing oil. Japan is now very interested in setting up a series of coal-to-gas conversion plants near Hatfield B.C. Directly importing the coal would prove to be extremely uneconomical, therefore the plants will be built on or near the coal veins.

Surveyor Nenniger and Chenevert Inc., (SNC) one of the largest Canadian engineering and consulting firms, estimates that the B.C. project would create revenues in the order of \$627 million per year!

Basically, the conversion of coal to



Daily Graphic/Margo Rowley

hydrocarbon fuels involves adding hydrogen to coal so that the hydrogen-carbon ratio is elevated. It turns out that in coal conversion the production of hydrogen is one of the more expensive processes.

Today one can identify four main types of coal conversion: the Bergius process (or direct hydrogenation), Fischer-Tropsch synthesis, Flash Hydrolysis and the Super Critical Gas Extraction Process.

So far the Bergius process — or more simply termed direct hydrogenation — has proven to be the most popular method of coal conversion. Although Bergius developed the process in the early 1900s, his basic idea remains unchanged: coal is reacted with hydrogen under high temperature and pressure (400-800°F, 200-200 pounds per square inch) usually in the presence of a catalyst. (For those of you who saw the movie *The Formula*, many catalyst formulae are known, so that you heroic chemical engineers don't have to worry about getting a bullet between the eyes.)

Typically the Bergius reaction occurs between the solid coal, gaseous hydrogen and hydrogen-donating solvent (tetralin or heavy oil) which also usually contains a catalyst. The resulting crude coal liquid is then separated from any unreacted coal and further reacted or distilled.

The second method of coal conversion is Fischer-Tropsch synthesis. In 1931 two German scientists (Fischer and Tropsch) found that when coal was burned with oxygen and steam, carbon monoxide and hydrogen gas were formed. When the newly evolved synthesis gas is purified and passed over a catalyst, many useful hydrocarbons, ranging from methanol and gasoline to waxes and oils, result. The process also creates ammonia, which is involved in fertilizer production.

The last two coal conversion techniques, Flash Hydrolysis and Supercritical Gas Extraction, are fairly recent innovations as implied by their space-age names. Flash

Hydrolysis really does happen in a "Flash"; finely pulverized coal is heated with hydrogen at 1800°F in a type of "rocket engine" reactor for between 10 and 100 milliseconds, whereupon the methane and liquid products are quickly sprayed with water jets, separated from the char and distilled.

Supercritical Gas Extraction involves heating a mixture of coal and solvent under conditions of very high — or supercritical — pressure such that the fluid mixture does not boil. The conditions permit better extraction of the soluble portions of coal and easier recovery of solvent. (When pressure is lower the solvent boils off. Thus it can be cheaply removed.) What makes this process different from hydrogenation is that no hydrogen is involved.

Dr. Norman Cooke, the Chief Process Engineer of the SNC Group, and an auxiliary professor at McGill, has been funded by the federal government "to do a technical assessment of coal liquefaction processes being developed around the world." Working with Dr. Josef Mikhlin, an SNC engineer and part time McGill prof, the research and development group selected seven "front runner" conversion methods.

Determining the best of these commercial methods involved considerations of the suitability of the various techniques to Canadian coal, the products of the synthesis, the stage of development of the process and their economic feasibility. SNC judged the suitability of the processes to Canadian bituminous coal by shipping some to each company for conversion and then analysing the slate of products.

The group immediately found that since Canada has an overabundance of natural gas, it would not be necessary for the plants to produce synthetic natural gas. Instead, transportation fuels would be the main objective. Cooke told the Daily that "based on the prices we have the Fischer-Tropsch process is 1.5 times as expensive as any Bergius process and inherently

thermodynamically less efficient." After all the comparisons, "we have decided which would be the best process for sub-bituminous coal, it certainly looks like the H-Coal process" — one of the four American versions of the Bergius process — "would be the front runner for that," he said.

It is important to note, however, that the only commercial synthetic fuel plant is Sasol, while the other processes are still at the pilot plant or laboratory scale stage.

Here at McGill, various projects have been or are being conducted that could directly or indirectly tie in with coal conversion. Prof. O.M. Fuller and Prof. W.J.M. Douglas, Chairman of the Chemical Engineering Department, are starting an experiment to investigate new ways to obtain liquefaction without having to resort to expensive high pressure processes. Currently they are studying the liquefaction of wood. Wood was chosen because it is renewable and plentiful in regions where there is no coal, and because there is an abundance of waste materials from pulp and paper products.

With the same type of biomass utilization in mind, Prof. W.H. Gauvin is involved in the gasification of peat. A world expert on plasma, Gauvin wishes to react this substance with peat. This type of plasma consists of steam heated to thousands of degrees Celsius by an electric arc, an idea encouraged by the Québec government because of the electricity involved. Hopefully under proper conditions a synthetic gas will be produced.

Another aspect of coal conversion that has been looked into at McGill is the scrubbing of sulfur from coal. As is well known, coal-burning produces large amounts of sulfur dioxide which causes acid rain, an environmentally disastrous phenomenon.

The Department of Metallurgy with McGill Profs J.H. Vera and T.J. Boyle as consultants has developed a computer program called "FACT" which investigated a large number of thermodynamic systems involving gasification of coal. FACT found that by gasifying coal in a pool of molten

sodium carbonate, the addition of small amounts of iron or calcium to the bath would retain the sulfur, thus producing what Dr. Cooke calls an "essentially sulfur-free gas which could be burnt or put to other uses." According to Cooke, plans call for building lab apparatus to test FACT's conclusions.

Much of the future of coal conversion in Canada may not be determined by research or by groups such as SNC but rather by the policies of the federal government. According to Cooke, the federal government is not doing nearly as much as it could to create an impetus towards large scale coal conversion. In addition to funding problems a large communication gap exists between the National Research Council and the private sector. Consequently, the Canadian private sector is seriously lagging behind the American private sector. The latter often acquires expertise due to the American government's practice of contracting out research.

If this practice continues, many of the future Canadian projects will be handled by American firms, which would once again deal a blow to the Canadian scientific and technological communities. The B.C. and Alberta governments have already signed contracts in the U.S.

However, on a more optimistic note, Cooke feels that Canada's first synfuel plant could be in operation by 1990 or even earlier. According to Cooke, if a plant could produce oil today using the H-coal process, the production cost would be \$21 per barrel of oil, while distribution and profit costs would raise the price another \$17.

The reader may now feel that synthetic fuel is an exciting prospect for the future, but the question still remains — will the sulphur dioxide pollution put butterfly collectors out of business? When asked a similar question Cooke said that we have technology to overcome the problem. Undoubtedly, legislation would ensure that companies made use of this technology.

All in all, it seems that many of coal conversion's real stumbling blocks lie in raising the necessary capital to establish the plants. Synthetic fuel production will nevertheless save society much more money than the cost of the plants. Since the products of coal conversion are hydrocarbons, the whole process of reconverting industry and transportation to an alternate form of fuel will be avoided, and thus society's foundations will not be knocked out from under its feet.

DAILY SCIENCE ISSUE

The Experts Speak Out

Engineer:

Canada's energy program is incoherent

by John Burke

The events following the OPEC oil embargo of 1973 have led to the creation of university level courses in the energy field all over the world. One such course, called "Energy Technologies," is being taught at McGill for the first time this semester. It deals mainly with present and possible future energy technologies, as well as methods for reducing energy consumption.

Professor John Dealy of the Department of Chemical Engineering, who teaches the course, is critical of the way Canada is managing our energy resources. He called our National Energy Program an "incoherent political document" which does not face up to reality. According to Prof. Dealy, we must raise oil prices to world levels as soon as possible. If we don't do so, the eventual adjustment will be much more painful.



Prof. Dealy

We should also be trying to develop our own petrochemical industry so that our oil provides the maximum industrial benefit to the economy.

Dealy does agree with government involvement in certain areas. He believes that "some services are so essential that they should not be left entirely to the private sector," and this includes energy. Petro Canada can also be used by the government as a "yardstick" to measure the private companies' financial claims and assess their credibility.

Although he encourages the search for alternative sources of energy, Dealy conceded that "none are panaceas." Due to their technological complexity, none of these alternate sources is really competitive yet. Furthermore, the capital investment needed for new projects in areas such as fusion and fission is so large that private companies usually cannot handle

the burden alone. Government involvement is often necessary, as in the case of our own Candu reactor. According to Dealy, "There

"There is no alternative in the near future but higher energy prices"

is no alternative in the near future but higher energy prices."

Of course, higher oil prices would encourage the private sector to conduct more research in alternative energy.

The United States continues to shun government involvement in the energy field and is, as a result, becoming more and more isolated from the rest of the world in this respect. However, the powerful effect of high oil prices became evident last year when oil consumption actually decreased in the U.S. and OPEC production hit a 10-year low, although these effects were admittedly due in part to the American recession and the conflict in the Middle East.

The energy outlook may seem bleak, but Dealy said that this is not necessarily the case. Put simply, "We must change our way of doing things, and the sooner the better." We act as if our future is only "an extrapolation of the present" with minor modifications. To solve Canada's energy woes, Dealy says, we need to adopt more serious measures and stop using "band-aid" solutions.

Economist:

Low oil prices hurting industry

by Jean Cypher

Sound economic policy should be based on energy efficiency, but short-sighted programs and local political interests often get in the way, says Jean Paul Custeau, who recently received his MA in economics at McGill.

Custeau, who wrote his thesis on national oil policy and the refining industry, speaks disparagingly of governmental policies that support out-dated, energy-inefficient industry, and protect consumers from increases in the world oil price. While they lighten the impact of the current recession, such measures eventually beckon crisis.

At present the government subsidizes 53% of the bill for imported oil — \$20 on every barrel. The national energy program seeks to mitigate "unpredictable...shocks" of OPEC price increases by raising the price of oil at a gradually accelerating rate each half-year until 1990.

"If the government had done that ten years ago, it might have been effective. But

"Economic policy is a short-term deal. It lasts two years—anything to get re-elected."

now it's too late," said Custeau.

"We will never be up to the world price at that rate."

The problem with the depressed price of petroleum within Canada is that while it pays the cost of old-field (1950-60 dated production) which is roughly \$2.00/barrel, it does not provide a sufficient profit margin on new fields, which cost approximately \$14.00/barrel to exploit. (Oil is sold at \$18.00/barrel.) "For example, at the Beaufort Sea installation, the cost of insulation alone was one billion dollars," said Custeau.

"There are two factors which warrant a price hike. We need a price which allows production, and which relates to the scarcity of the product. And secondly, we must encourage the development of an energy-efficient economy."

If the internal market price of oil increases to the world price within two years, Custeau anticipates a rise in the demand for capital and labour to develop energy-efficient goods and industry or to convert old industry to better means of production. Demand on the national reserves would gradually decrease, providing time for widespread conversion to other energy sources.

Eventually, ironically, the OPEC countries will feel the repercussions at their initiative in the current price war. As demand decreases, and as supply from other Third World nations, such as Mexico and Indonesia increases, the proportion of the market dominated by OPEC will fall below 40-60%. It will then no longer be able to monopolize the market, filling supply at or below demand.

As for alternative fuels, various types of solar power may suit small-scale needs, but the trend in industry is towards massive production, imposing high energy demands. For this Custeau advocates fusion research.

"In the meantime — and I will probably get killed for saying this — we'll probably need to build one or two more nuclear reactors just to employ the skilled labourers and to maintain and develop the skill that will be required when we are ready to build fusion reactors." Gas, shale, tar sands, and hydroelectric power can supply industry for the interim.

"But the best way to bide time is to become energy-efficient."

Whatever the future course, at issue is who should own the means of production. Of the 25 petroleum corporations in Canada, 17 are 50 percent foreign-owned and controlled, which translates to 72 percent of oil production. The goal of the energy program is to have 50% complete Canadian ownership by 1990. The federal government plans to establish one or two more Crown corporations, in addition to Petro Canada.

"The tendency of the Canadian government is that if there's a problem, create a Crown corporation to take care of it. There are 4,000 Crown corporations in Canada. The government accounts for one quarter of the gross national product which is an indication that the government has no faith in free enterprise," he said.

"The government should not be part of industry. It ought to provide commodities which can't be bought and sold on the free market, such as health."

Petro Canada, however, does have its good points, he conceded. The trend in the international market is to conduct state to state deals. Petro Canada is in the position and has the expertise to negotiate with foreign governments. It then sells to Canadian producers and refineries.

But, according to Custeau, Petro Canada proposes that it become a completely self-contained processor; i.e. that it handle production, importation, refining, and retailing of oil.

"This would be very bad. The temptation

is just too great."

The position affords monopolization of the market, no matter how many Crown corporations business is divided among.

"And these corporations become really inefficient," said Custeau. Supported by the government, they are not under the "normal constraints of capitalism." The effect on government is that it "makes policy on how to get money."

The sale of gas to the U.S. is a corollary to this effect.

"It is so hypocritical on the part of a government who wishes to nationalize its energy." But the government gets revenues on the production and export of the gas. It needs the money to subsidize oil imports. Meanwhile the subsidies of oil imports forestall conversion to gas and foreign markets must be sought for the surplus.

Conservation must play key role

by Kathy Salamon

A major study by the American National Academy of Sciences states: "Conservation is the most important aspect of future energy policy." The report concludes: "Energy conservation in the form of improved energy efficiency offers the greatest potential for easing energy problems" and these changes "are possible without appreciably affecting either the way of life or the standard of living of the consumer."

Although conservation, greater efficiency, and new technology are likely to be the energy policies of governments in the next few decades, as stated in the NAS report, there are some ecologists who feel that, even if successful, this is still not enough.

McGill ecologist Dr. Stuart Hill feels that the problem runs deeper than externalities.

"We need value changes in our society," he said.

"People's attitudes are going to have to change."

Hill, a professor of entomology at Macdonald College, believes that conservation is useful "only as part of the solution." He said: This is what I call 'fiddling with the fine tuning'.

"The real solution lies in our attitude toward the environment," said Hill. "For full human development, humans must see themselves as being a part of the cosmos, not as separate to it."

"Right now, we are a society of mass

"It is quite common for companies to go out looking for oil, and find gas. They can't just sit on it, waiting for the national market to find a way to use it," he said.

"Economic policy is a short-term deal. It lasts two years — anything to get re-elected." Maintenance of the status quo, of out-moded industry, is part of the scheme, he said.

"Look at England. Its industry goes back to the 1930s. Really decrepit. In the U.S. and Canada it's more like 1950. But they find all sorts of ways to keep it going, like cushioning oil prices."

Custeau blames the decline of England's economy on the efforts of the Labour Party to insulate industry from the effects of the free market. "And Canada and the U.S. are going right away down the same path. The very same path."

neurotics with an uncontrollable urge to consume.

"Energy efficiency is nice, but as long as people have this unquenchable appetite to consume, they will push that energy source to limits that cannot be supported. It is people who will have to change."

Any other solutions, for Hill, are short-term answers or "band-aid" solutions. "These can be useful in an emergency," he said, "but they do not really go to the root of the problem. The people who believe in these band-aids are just postponing the day of reckoning."

"In ecology, balance is a key concept. In humans, there has to be a balance between inner and outer development. Nobody wants to look inside of themselves. I don't think I've met a person yet without any neuroses."

"We tend to look at problems in a linear way," he said, "but in reality everything is interrelated. You can't separate them. If we focused on human development, it would have spinoffs in all areas — it is the neuroses that perpetuates most of our problems."

Hill looks upon this concept as an exciting, optimistic one.

"People have always talked about technology or revolutions as solutions to problems. But no one has tried to change people. The human potential movement is gaining strength," he said.

"When I look at people who have changed, it gives me hope."

DAILY SCIENCE ISSUE



Solar energy: Sunny prospects for the future

by Bill Skarnes

Virtually every energy source that is in use today originates from solar energy. Wind, hydro, oil, coal, natural gas and wood are all products of the sun.

But the primary energy sources in use today represent the non-renewable ones, many of which are predicted by experts to run out within our lifetimes. So, renewable energy sources will be of great importance in the near future.

The use of renewable sources of energy did not begin with the advent of solar collectors, photovoltaic cells and wind-powered electric generators.

On the contrary, man has made use of renewable energy sources for centuries. Only a few generations ago, our ancestors were dependent on resources such as wood, wind, sun and water to meet their energy demands.

Today, with the rapid increase in oil prices and the uncertainty of supplies due to tensions in the Middle East, alternative sources of energy are becoming increasingly important.

The United States government is putting emphasis on synthetic fuels as a means of decreasing its dependence on imported oil. However, the Harvard Business School's study on energy, published during the summer of 1979, urges conservation and a transition to solar energy rather than use of synthetic fuels. Robert Stobaugh, director of the Harvard Business School energy project, believes that conservation programs can save five times as much oil as can be produced synthetically.

As far as solar energy is concerned, Stobaugh said in an interview with *The New York Times*, "We're not saying we're going to have a solar society, we're just saying we should go in this direction. The move should be supported not only by the environmentalists but by the oil companies and the rest of the business community — for their own good."

The Department of Energy, Mines and Resources Canada also advocates the use of solar energy, particularly in home heating.

It has been estimated that roughly 50 per cent of Canada's energy needs go to the production of low grade heat, heating of air and water for domestic and industrial use. With the technology available today it is possible to supply 70 per cent of a home's heat and hot water through the use of a standardized solar heating system at an estimated initial cost of \$6,884 to the consumer, according to the 1978 report of the Department of Energy, Mines and Resources Canada.

Similar systems can be put to use in industry. It is evident that if these systems were implemented across the country a

significant amount of oil and natural gas could be saved.

This solar heating system does have drawbacks. The solar collectors, which absorb sunlight and convert it to heat, must be placed in the proper orientation for maximum efficiency. Most homes would require custom-built structures to support the collectors.

However, solar collectors are being developed which would use the existing structures such as walls of the house, without much loss in efficiency.

Solar collection systems can easily be integrated into a new home during its construction. Presently, though, the conventional rock beds or water tanks, which store the heat generated by the solar collectors during sunny periods and distribute it when it is needed, are rather large, and would be hard to fit into existing

**...conservation programs
can save five times as
much oil as can be
produced synthetically...**

homes.

A solution to this problem has already been developed by Saskatchewan Minerals. It involves the use of a material called Glauber salt which is a solid at room temperature.

The heat from the solar collectors melts the solid into a liquid. The heat is later released when the salt freezes. And since the freezing point of Glauber salt is near room temperature, it is not only a perfect heat storage medium but also more efficient than either rock or water. Therefore a smaller amount is required for the same heat storage.

In the past, Glauber salt was proven to be very unreliable because after a few freeze/thaw cycles the substance deteriorated. It was discovered that by adding peat moss to the salt, the breakdown process could be prevented. Both peat moss and Glauber salt are found in large quantities in Canada and will eventually replace the rock and water storage systems.

The solar heating system described in the Department of Energy, Mines and Resources report would not be adequate to provide a sufficient amount of heat during extended periods of cloudiness or extreme cold, and so auxiliary energy sources are needed. Natural gas and electricity are seen to be the best choices because they are readily available.

The utilities, in an effort to protect their interests, may cause some problems, and, according to the report, "anything less than a positive effort will only undermine solar energy development in Canada."

The solar-energy heating system would be competitive with the conventional heating systems if the government provided incentive programs. The results of the study indicated "that the inclusion of solar equipment in the assessed value of the house for taxation purposes represents a major deterrent to large-scale technology in Canada."

In addition, the report suggests that the government should encourage consumer demand by demonstrating the various applications of solar energy and installing solar heating systems in public housing, government buildings, and other publicly funded institutions.

The effects of a solar industry on employment in Canada was the topic of a study entitled "Solar Heating and Employment in Canada," published in 1979 by the Department of Energy, Mines and Resources Canada.

The findings show that "direct employment in the solar heating industry between the present and the year 2000 could amount to 150,000 man-years."

The study also estimated the reduction of employment in the conventional energy industry and concluded that "the employment lost as a result of this (implementing solar energy) is estimated to be only a small percentage of the employment generated by the solar industry."

In spite of these studies, the Canadian government seems reluctant to aid in the transition to solar energy.

T.A. Lawand, director of Macdonald College's Brace Research Institute, which has interests in solar research, believes that solar power poses a danger to the oil

companies and utilities, and is not "politically sound."

He argues that solar technology is a means by which an individual can supply himself with what he wants, namely heat for his home and electricity for his appliances without having to go to a corporation or government agency. These institutions will no longer have any control over these resources and profits and taxes will be lost. While the consumer should rejoice at these advantages, government and industry are likely to take a different view.

Lawand also feels that the solar industry is headed in the wrong direction. The industry, in an effort to centralize solar energy, is examining ways to concentrate this very diffuse form of energy. For example, American researchers are studying the possibility of beaming microwaves to earth from large solar collectors orbiting in space. Lawand said that such a move would prevent the consumer from becoming independent of large energy corporations.

Lawand also said that the U.S. government is deterring the progress of the solar industry by pouring in too much money too soon without having structures set up that could effectively absorb the money and put it to good use. Most programs run in this manner will inevitably lose their direction and fail.

Keeping in mind that one half of Canada's energy needs go toward heating, it is sensible to make use of the available solar heating technology. Solar energy is better suited for this application than nuclear energy or synthetic fuels, without posing any environmental dangers. However, it remains to be seen whether vested interests accelerate or delay the advent of the solar age.

This science issue was produced by : Julian Betts (Ed.), Brahm Pascal, Wendy Jones, Sherif Atallah, Stewart Freed.

Special thanks to Margo Rowley and David Samuel.

DAILY SCIENCE ISSUE

Comment

The Energy Crisis: Does Anybody Care?

by Julian Betts

For years, a full gas tank was as certain a thing as the sun rising in the east. Nobody ever gave it a second thought. As a result, governments the world over never bothered to formulate well thought out energy policies. Unfortunately, our nonchalant attitudes about energy have now caught up with us. Energy shortages have begun, and governments do not know how to react.

For example, ever since the 1973 oil embargo against the U.S., the Canadian government should have encouraged energy research on a major scale. Instead, we have received seven years of inaction. Indeed, to this day, the federal government lacks a coherent energy policy.

The "National Energy Program", calling for the Canadianization of the oil industry, underlines the fact that the federal government simply does not understand the gravity of the energy crisis. While the Canadianization of the oil industry may appeal to us nationalistically — and perhaps economically — it does nothing to get more oil out of the ground. Regardless of who owns whose oil, it will all soon run out anyway.

The longer the federal government views energy as a solely political question, the worse Canada's energy problems will become. Instead of playing political games, the government should seek social and technological solutions to the energy crunch.

Clearly, the public must be made aware of the importance of energy conservation. A report prepared by the American National Academy of Sciences stated unequivocally: "Conservation is the most important aspect of future energy policy." Thus, the government should undertake a major campaign to push conservation in industry and in society as a whole. Secondly, the federal

government should greatly increase funding in alternative energy research, so that viable alternatives to fossil fuels become available soon.

Statistics reveal the undue emphasis the federal government places on political solutions to the energy crisis, as opposed to technical solutions.

The federal Ministry of Science and Technology estimates expenditures on all forms of energy research at \$158.8 million for this fiscal year. This energy budget finances all non-private research into fossil fuels, conservation, renewable energy resources and nuclear energy. It funds research mentioned in almost every article in this Science Edition. Canadians should reap tremendous benefits from this relatively small investment.

In comparison, Petro-Canada last week purchased a private oil company for the gargantuan sum of \$1.46 billion — over nine times the federal energy research budget. This purchase will not add a single drop of oil to Canada's supplies. It will, however, give the federal government ownership of 1,100 gas stations in eastern Canada. The question naturally arises: are gas stations really nine times more important than all Canadian energy research? The federal government seems to think so.

Another of the government's policies — that of maintaining low oil prices — also hurts Canada's conservation and research programs. Low oil prices encourage waste. They also discourage the private sector from doing alternative energy research.

However, if Canada raised its oil prices to near world levels, energy conservation would receive a major boost. Canada's balance of payments would thus improve. The millions of tax dollars now flowing out of the country to subsidize imported oil could be used to help the sectors of

Canadian society which depend the most on fossil fuels, the agricultural community being the most obvious recipient. Furthermore, the private sector would find new incentive to develop alternative energy technologies, which would have been unable to compete at lower energy prices. Canada's energy grid would consequently achieve greater diversification. The transition from fossil fuels to alternative technology would proceed much more gradually, and hence much less painfully. Diversification would also create added resiliency to foreign oil cartels. Thus, higher oil prices promise far more long-term advantages than short-term disadvantages.

Those people who believe that low oil prices actually help the economy would do well to remember the disastrous effects that protective tariffs had on the world economy in 1929. Similarly, those who contend that a conversion from fossil fuels to other energy sources would dislocate the economy should remember that in World War II, the entire American auto industry converted to arms production within nine months, proving that "where there is a will there is a way". The longer we wait, the more it will hurt.

The Canadian public doesn't realize the immense danger posed by the energy crisis. Neither does the federal government — at least judging by its policies. The government now faces the choice between political popularity on one hand, and common sense and foresight on the other. Let us hope that in the near future it chooses the latter path. We simply cannot allow political opportunism to impinge on Canada's energy security any longer.

New Energy Technologies Abound

by Mike Beckerle

The increasing demand for new non-polluting energy systems has caused significant advances in several energy technologies.

The first of these is a new solar energy generation and storage system developed at Texas Instruments.

The device uses the photovoltaic principle — turning sunlight directly into electricity — at an efficiency rate of 13 percent, which is high for photovoltaic conversion. The primary advantage of the new system over conventional "solar cells" is its lower cost. The system is designed for residential use, and Texas Instruments claims it can supply 90 percent of a home's electrical power needs, at a projected cost of four cents per kilowatt hour, the same as the current electricity price in the United States. That's bad news for the electric companies.

Another electricity-generating scheme, on a larger scale, hinges on extracting the kinetic energy of the ocean's wave action. The mechanism is based on the observation that when small hemispherical domes are placed in shallow waters, so that they are just covered at the top by water, the waves will tend to spiral inward towards the center of the domes. The spiralling water can then be used to turn turbine blades which would generate electricity by driving a generator within the dome. The construction of this type of facility is certainly a major financial undertaking; however, the source of power will never run out. However, sapping the ocean's energy on a wide scale could reduce water temperatures significantly. Future research will provide more definite answers.

Conservation of petroleum is another major concern, and a

Calgary firm is pursuing the development of a device to replace oil or gas heating. The system uses a reversible reaction that can either release or consume heat.

Certain minerals called zeolites can absorb water like a sponge, giving off heat. When they themselves are heated, the zeolites give off water. Since the process is repeatable, the idea is to use a large amount of good zeolite to store about one billion BTUs of heat, (about a week's worth of heat in an average home). Simply adding water slowly releases all the stored energy for home heating.

Zeolite can be dried out again using inexpensive off-peak electricity. By eliminating the use of oil furnaces, not only would this provide cheaper, more reliable heating but it would also reduce pollution.

Meetings

An early Valentine for ALL Daily staffers:

To our darling staff,
Roses are red, violets are blue,
Staff meetings are a drag, but
show up anyway (or else!).
Today at 4pm.

Passionately yours,
R & R

Meeting for all regular and prospective science writers today at 5:00pm in the Daily grotto, room B03, Student Union. All are urged to attend. Prizes for best costume. We appreciate your comments. Do you find the science edition too general, too technical or too...? Please bring your replies to the Daily office c/o The science issue, Julian Betts.

Today

Auditions

For the Directing Projects will be held today and Friday between 3:00 and 6:00pm in Room B50 of the Arts Building Basement. Hoffman and De Niro are going to be there. Are you?

History Students' Association

There will be a general meeting for all history students today, February 11th at 4:00pm, Room L 617.

Prospective Election Candidates

Nominations close tomorrow at 4:30 for positions on the Students' Society Executive, University Senate, and Board of Governors. If interested, nomination papers available at Students' Society Office — get them signed and become a candidate!

The McGill Philhellenic Folk Dancers

Are holding their Greek dancing lessons tonight at 7:00pm in Room B01 of the Student Union Bldg. 3480 McTavish.

Women's Union

Press conference to discuss the re-opening of the Carolyn Birthing Center, Montreal "Home Birth" Center recently closed by La Corporation Professionnelle des Medecins du Quebec. 11:00, Leacock 14.

Attention Management Students

Come witness the great showdown between your two women's hockey teams. Wings vs Army, 9:00pm. Molsen winter Stadium.

McGill Armenian Students' Association Get together TODAY 1:00pm to 3:00pm in Room 406 of the Union Building. All welcome.

Lecture

Professor B. Czarnocki, Sociologist at Concordia University, recently returned from a year and a half visit to Poland, will speak on "Poland 1980: A Sociological Background of the Events" at 4:00pm in Leacock 112.

The Bible and Human Liberation (Study Group)

The group will explore the Bible's bias for Life! We will relate what we study to our own context and our own lives! Today at 4pm at United Theological College 3421 University. Led by Rev. Chris Ferguson.

Caribbean Students' Society

Invites you to their Winter Carnival Luncheon today at the Students' Society Canteen, from 12 noon to 2pm. Menu:

Chicken Roti; Curry and Rice. Price: \$2.50.

McGill Department of History

David Stafford, Associate Professor of History in the University of Victoria, author of *Anarchism to Reformism* and *Britain and the European Resistance* and who is working on a history of the British spy novel, will speak on 'Conspiracy and xenophobia in the popular spy literature of Edwardian England' at 4pm in Leacock 632.

Term Paper Research Workshops

For humanities subjects 10 - 11am. For Social Science subjects 1 - 2pm. Starts at Undergraduate Library Information Desk. Term Paper Writing Workshop Part II in the Undergraduate Library Workshop Room, Main Floor, 11:15am - 12:45pm. Sign up at Information Desk, Undergraduate Library or call 392-4288.

Lecture

Professor R. Brenner, McGill Professor of Economics, will give a lecture on "The Economy of Israel: Coping with Inflation", today, February 11 at 4:00pm in Leacock 111.

McGill Advertising Club

We are pleased to present Michel Cladios, Media Director at J. Walter Thompson Ad Agency. The topic under discussion will be "The Role of a Media Director". The presentation will take place today at 1:30 in Leacock 111. Members only.

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by Eugene Zimmerebner
of The Excalibur
for Canadian University Press

Walk to the corner of Spadina and College Street in Toronto, just on the edge of the garment district and Chinatown, and a partly illuminated sign says you've arrived at the Silver Dollar Tavern. Walk through two sets of heavy wooden doors, down a flight of stairs and you enter a large, low ceilinged, ill-lit beverage room with plain, sturdy wooden chairs and tables.

What makes this beverage room with a raunchy country and western band unique is that almost all the people are Native Canadians. As a policeman told me, "The Silver Dollar is the Indian place."

Inside, drinking cheaply-priced draft and talking to an Indian named Ed, I watched an old Indian walk in with a big smile, craggly marked face, and a brush cut, talking to friends along the way. He was triumphantly waving a \$5 bill.

A couple of hours later, walking out of the tavern, I noticed the same old Indian sitting on the curb, passed out. Picking him up and getting his address, I put him in a taxi and sent him home.

While most Torontonians may not notice it, the Silver Dollar is one of the few outward signs of a great social phenomenon taking place: Native Canadians consisting of status and non-status Indian, Metis and Inuit, have been leaving reservations and rural areas of Canada and are migrating to the urban centres. More and more, Natives are becoming an urbanized people.

In a devastating report released by the Department of Indian and Northern Affairs this past summer, *Indian Conditions: A Survey*, it states that the off-reserve status Indian population has grown from the level of 42,000 in 1966 to 77,000 in 1976. This means approximately 30 per cent of all status Indians live off-reserve. By the mid '80s, some estimate this figure could rise to 60 per cent.

The Federal government has only a direct responsibility towards status Indians as defined in the Indian Act. So the Department of Indian and Northern Affairs does not publish comprehensive statistics on non-status Indians, Metis and Inuit. But those involved with native affairs estimate there are as many status Natives in urban centres as status Indians. This makes a total of 150,000 Native Canadians in our cities.

Indian Affairs has abundant information documenting the conditions of status Indians on reserves. A summary of this information was contained in *Indian Conditions*, and even in its bureaucratic prose it makes for powerful reading:

- The percentage of violent deaths among Indians is three to four times higher than among the national population;
- An estimated 50 to 60 per cent of Indian health problems are alcohol-related;
- The strength and stability of family unites appears to be eroding, as evinced by increased divorce rates, births outside marriage, children in care, adoptions of Indian children by non-Indians and juvenile delinquency;
- Use of social assistance and welfare among Indians has increased from slightly more than one-third of the population to slightly more than one-half in the last 10 to 15 years;
- Indians and other natives continue to be over-represented in jails and penitentiaries by more than three times their proportion of the total population;
- The quality and availability of serviced housing has improved but Indians housing lasts about 15 years compared to 35 years for non-Indians. There is a need today for about 11,000 houses to relieve crowding and replace unsatisfactory houses;
- On the average, 50 to 60 per cent of Indian housing has running water and sewage disposal, up from 25 per cent 51

years ago, but in some areas (such as Manitoba and Saskatchewan) as little as 10 per cent of housing is serviced;

• University enrollment has risen from 57 in 1963 to 2,700 in 1979, but participation is less than one-half national levels.

The picture the report draws of status Indians on reserves stands as an indictment against the federal government's programs and policies over the years.

While Natives have been migrating to the cities in greater numbers, no level of government has been documenting this migration or what happens to Natives once they arrive. A great social change is going largely undocumented.

While government agencies may not know if Natives face problems or ask for their services, Robert Holota, director of the counselling unit and a community worker at the Native Canadian Centre, knows obstacles Natives face in the city. He gained his street smarts living in Toronto for the past eight years after leaving his reservation.

Sitting back in his chair, smoking a cigarette, Holota talks about the

already alcoholics. It isn't the city that turns them to drink," said Holota. "This need to drink with other Indians makes the Silver Dollar an important Indian institution in Toronto."

This lack of self-sufficiency allowed by the Department of Indian and Northern Affairs raises Wilson Ashkewe's anger. As one of four native employment counsellor specialists in Canada manpower offices in Toronto, Ashkewe is an example of a new Native class of government bureaucrat: that developed in the '70s after the federal government allowed Natives to take over their own affairs.

"Indians are big business," said Ashkewe, shaking his head. "The government may have originally wanted to help Indians with programs but then it grew and grew. The bureaucrats just wanted to protect their jobs and construct programs for their idea of an Indian. They didn't want us to become self-sufficient because they would lose their jobs. We had to fight this."

Holota said in his matter-of-fact tone that Natives still face racism but he tries his best to not send them to job

makes a person an Indian.

"I decided that I wanted to get a good job. I like the idea of owning my own home, my own cottage, my own car," said Ashkewe. "Because I settled down, some think they are more Indian than I am. They call you a white apple."

Family stability might appear to be a problem but the Centre received names for interviewees from agencies, so it is not a scientific survey. But of the 181 families, 111 had a single parent.

When asked, "Where does your family income come from?" 82 families said social assistance (welfare or mother's allowance), 75 families said both social assistance and employment, 6 families said employment insurance and 2 families said student allowance and employment. So there seems to be an equal reliance on income from employment and social assistance and other forms of support.

One major finding of the survey is the families' concerns in ensuring that their children receive all the educational, health and support programs needed to make sure they are not handicapped later in life.

Native leaders have tried to ensure that their children growing up in the city will be able to possess the skills needed to survive in the white man's world, but also not to forget they are a distinct people — Native Canadians. Many natives send their children to a public school called Wandering Spirit Survival School, part of the Toronto Board of Education. The children are taught the same curriculum as any other public school, but they also learn about their culture, their language and what it means being Indian.

Trying to teach children what it means to be a Native in the city could be most difficult. When I asked Natives what it meant to be a Native in Toronto, they could not really answer the question. What they did say is that the urban Native is in the process of defining himself as he becomes a part of the urban scene.

Ashkewe said the Native in Toronto is not sure of himself in this environment that attracts him from his reserve, whether for jobs or simply to see the bright lights.

"The Native has three choices before him," said Ashkewe. "Separation, assimilation or integration." Natives can completely separate from the white man, they can totally assimilate and become a white man with red skin or they can learn to integrate themselves, taking the best from the white man in learning to survive in an urban environment while still keeping the best of being Indian.

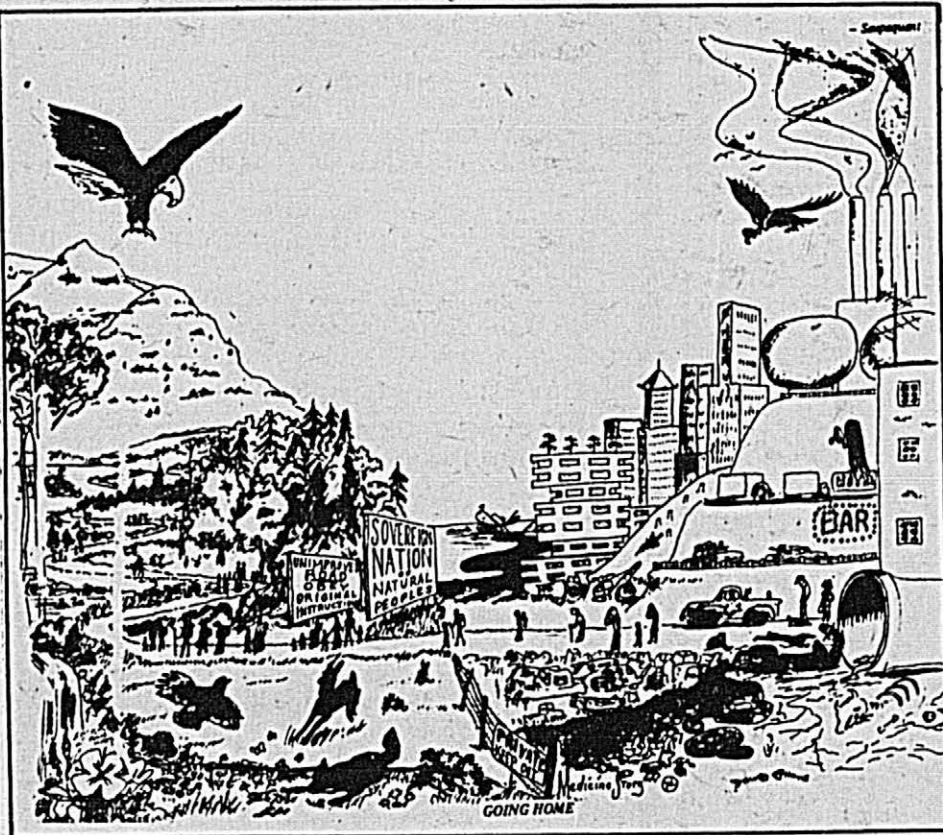
Holota said he is optimistic about the Native's future in the city. Already he sees the community developing and strengthening its economic and political power and pushing for the Native's fair share in the city. Once Natives learn self-sufficiency, they will kick the drinking habit and the sad, tragic stories of death that periodically come from Kenora will disappear.

"Sure, I'm optimistic. There's no point in what I'm doing if I'm a pessimist," said Holota.

Ashkewe also sees a lot of reasons for being optimistic about the Native's future in the city. While interviewing Ashkewe in his office, he received continuous telephone calls from other Native employment counsellors. They established a new program for Natives where they would be taken right into the workplace and learn the requirements of the job and then receive pre-training in that occupation.

He had lined up a number of unemployed Natives to take the program to help them find employment. Unfortunately for the program, these unemployed Natives found other jobs for nine, seven and six dollars an hour while they were waiting to take the program.

As I left Mr. Ashkewe, he was running around with a smile on his face, trying to find other Natives to fill the program.



Native Canadians: Urban Transition

Native's experiences in the city in a matter-of-fact tone. Young Natives come to Toronto unprepared to live and work in an urban environment. They don't get an adequate education on the reservation and possess few job skills. Coming from a rural environment with extended families, Natives are isolated by the city with its emphasis on individualism. They don't receive much guidance in living and working in the big city.

"Indians who have a sense of self-sufficiency do okay in Toronto, but there are a lot of Indians who have grown up dependent on the federal government and its welfare," said Holota. "These dependents find it very difficult to make it on their own because the federal government doesn't take care of them off reserve."

This lack of inbred self-sufficiency on the reserve is one of the main reasons there is so much alcoholism among Natives, according to Holota. It gives them a way of escaping from their problems.

"Some Indians coming to Toronto are

interviews where he knows the employers are racist. Mark Nakamura of the Ontario Human Rights Commission said the commission receives few complaints of racism but this does not mean Natives are not being discriminated against. He said there are several reasons why Natives may not complain.

"There may be a lack of trust of governmental institutions, they may not be aware of the Commission's existence, or people who face discrimination may not feel it worthwhile to pursue. Natives don't need the aggravation," said Ashkewe.

While some Natives coming to the city are transients, moving from place to place, others have come to the city to stay. Ashkewe said natives who decide to settle in Toronto have a change at a good occupation, especially since the federal government has initiated affirmative action programs in six of its departments.

Settling down in the city and giving up the idea of being a transient is considered losing one of the traits that

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section A

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Peter MacArthur
Chief Returning Officer
Students' Society

Students' Society ELECTIONS



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TO BE HELD

WEDNESDAY, MARCH 4, 1981

(ADVANCE POLLS — MARCH 2, 1981 — PLACES TO BE ANNOUNCED)

NOMINATIONS ARE HEREBY CALLED FOR THE FOLLOWING POSITIONS

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VICE-PRESIDENT, Internal Affairs

VICE-PRESIDENT, External Affairs

*BOARD OF GOVERNORS

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ONE GRADUATE REPRESENTATIVE

*SENATE

ARTS (Incl. Social Work)

DENTISTRY

EDUCATION

ENGINEERING (Incl. Architecture)

LAW

MANAGEMENT

MEDICINE (Incl. Nursing & P & OT)

MUSIC

GRADUATE STUDIES (Professional)

GRADUATE STUDIES (Academic)

RELIGIOUS STUDIES

SCIENCE

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1 REPRESENTATIVE

DEADLINE: THURSDAY, FEBRUARY 12, 1981 (See below)

CANDIDATE'S QUALIFICATIONS AND NOMINATING PROCEDURES:

EXECUTIVE

President — may be any member of the McGill Students' Society in good standing with the University except:

i) partial students taking less than three courses

ii) students registered in the Faculty of Graduate Studies and Research who are non-resident students or full members of the teaching staff.

Nominations must be signed by at least 100 members of the McGill Students' Society together with their year and faculty.

Vice-Presidents, Int. & Ext. — same qualifications as for President. Nominations must be signed by at least 75 of the McGill Students' Society together with their year and faculty.

BOARD OF GOVERNORS

Candidates must be members of the McGill Students' Society and must be registered at McGill University as full-time students in good standing following the normal load of courses per year. Nominations must be signed by at least 75 members of the McGill Students' Society together with their year and faculty.

SENATE

Candidates must be members of the McGill Students' Society and

1. be students in good standing who are registered full-time for a degree or diploma and have satisfied conditions for promotion in their previous year of studies,

or

2. be students in good standing who have satisfied conditions for promotion in the previous year of studies and who are registered in a degree or diploma program, but who are permitted by Faculty to undertake a limited program,

or

3. be students in good standing who are registered full-time or in a limited program for a degree or diploma, and who are repeating a year for reasons other than academic failure.

Nominations must be signed by at least 50 members of the McGill Students' Society who are in the same faculty as the prospective candidate together with their year and faculty, or by 25% of the student enrolment in the faculty together with their year and faculty, whichever is the lesser of the two.

N.B. Students in Continuing Education are NOT members of the Students' Society.

OFFICIAL NOMINATION FORMS ARE AVAILABLE AT THE STUDENTS' SOCIETY GENERAL OFFICE, ROOM 105 3480 MCTAVISH STREET.

ALL NOMINATION FORMS MUST HAVE THE CANDIDATE'S SIGNATURE TOGETHER WITH HIS YEAR AND FACULTY, ADDRESS AND TELEPHONE NUMBER.

*CANDIDATES MAY RUN FOR ONE POSITION IN EACH OF THE THREE CATEGORIES PROVIDED SEPARATE NOMINATION PAPERS ARE HANDED IN FOR EACH POSITION. A PENSKECH OF 100 WORDS OR LESS AND A PHOTO OF THE NOMINEE MUST BE HANDED IN WITH THE NOMINATION.

ALL NOMINATIONS MUST BE SUBMITTED TO THE STUDENTS' SOCIETY GENERAL OFFICE IN THE STUDENTS' UNION NO LATER THAN:

4:30 P.M. THURSDAY, FEB. 12, 1981
c/o LESLIE COPELAND, Secretary

PETER MacARTHUR
Chief Returning Officer